

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An optical assembly, comprising:

a laser diode for emitting light within a predetermined wavelength range at a temperature by providing a driving signal thereto;

a temperature sensor for sensing said temperature of said laser diode;

a heater for simulating a self-heating of said laser diode by providing a supply current before said driving signal ~~to said laser diode~~ is provided to said laser diode; and

a thermoelectric cooler for controlling said temperature of said laser diode, said thermoelectric cooler mounting said laser diode, said temperature sensor and said heater thereon.
2. (Original) The optical assembly according to claim 1, wherein said thermoelectric cooler is a Peltier element.
3. (Cancelled)
4. (Cancelled)
5. (Original) A semiconductor laser module, comprising:

(a) an optical assembly including

a laser diode for emitting light within a predetermined wavelength range at a temperature by providing a driving signal thereto,

a temperature sensor for sensing the temperature of said laser diode,

a heater for simulating a self-heating of said laser diode by providing a supply current,

and

a thermoelectric cooler for controlling said temperature of said laser diode, said thermoelectric cooler mounting said semiconductor laser diode, said temperature sensor and said heater thereon; and

(b) a controller including

a window comparator for comparing said temperature of said laser diode sensed by said temperature sensor and a predetermined range, said comparator outputting a switching signal when said temperature of said laser diode falls within said predetermined range, and

a first switch connected to said heater, said switch having a normally close configuration and turning off by receiving said switching signal from said window comparator, thereby shutting off said supply current to said heater.

6. (Currently Amended) The semiconductor laser module according to claim 5, wherein said driving signal includes a bias current and a modulation current, and said semiconductor laser module further comprises a second switch and a third switch, said second switch ~~turns~~ turning on and ~~supplies~~ supplying said bias current to said laser diode by receiving said switching signal, and said third switch ~~turns~~ turning on and ~~supplies~~ supplying said modulation current to said laser diode by receiving said switching signal.

7. (Currently Amended) The semiconductor laser module according to claim 5, further ~~comprises~~ comprising a memory means for preserving said predetermined range in a digital form.

8. (Currently Amended) The semiconductor laser module according to claim 5, further ~~comprises~~ comprising a digital to analog converter, wherein said digital to analog converter converts said predetermined range stored in said memory means in said digital form to an analog form, and outputs converted predetermined value to said window comparator.

9. (Currently Amended) The semiconductor laser module according to claim 7, further ~~comprises~~ comprising a driver for driving said thermoelectric cooler and a differential amplifier, wherein said differential amplifier compares said temperature of said laser diode sensed by said temperature sensor and a predetermined temperature, and outputs a signal for driving said thermoelectric cooler, so that a feedback control for stabilizing said temperature of said laser diode is achieved.

10. (Currently Amended) The semiconductor laser module according to claim 6, further ~~comprises~~ comprising a laser diode driver for driving said laser diode, wherein said laser diode driver receives said bias current and said modulation current, and outputs said driving signal to said laser diode.

11. (Currently Amended) A method for thermally stabilizing an optical assembly including a semiconductor laser diode for emitting light within a predetermined wavelength range at a temperature by providing a driving signal thereto, a temperature sensor for sensing said temperature of said laser diode, a heater and a thermoelectric cooler for controlling said temperature of said laser diode and mounting said laser diode, said temperature sensor and said heater thereon, said method comprising the steps of:

(a) providing a supply current to said heater for simulating a self-heating of said laser diode;

(b) shutting off said supply current after said temperature of said laser diode falls within a predetermined range; and

(c) providing said driving signal to said laser diode.

12. (New) An optical assembly, comprising:

a laser diode for emitting light within a predetermined wavelength range at a temperature by providing a driving signal thereto;

a temperature sensor for sensing said temperature of said laser diode;

a heater for simulating a self-heating of said laser diode by providing a supply current before said driving signal is provided to said laser diode;

a thermoelectric cooler for controlling said temperature of said laser diode, said thermoelectric cooler mounting said laser diode, said temperature sensor and said heater thereon; and

first to third terminals, said first and second terminals arranging said laser diode therebetween and said first and third terminals arranging said heater therebetween, wherein said driving signal is provided to said second terminal and said supply current is provided from said third terminal.

13. (New) An optical assembly, comprising:
a laser diode for emitting light within a predetermined wavelength range at a temperature by providing a driving signal thereto;
a temperature sensor for sensing said temperature of said laser diode;
a heater for simulating a self-heating of said laser diode by providing a supply current before said driving signal is provided to said laser diode;
a thermoelectric cooler for controlling said temperature of said laser diode, said thermoelectric cooler mounting said laser diode, said temperature sensor and said heater thereon;
an inductor connected in serial to said heater; and
first to third terminals, said first and second terminals arranging said laser diode therebetween and said first and third terminals arranging said serially connected heater and inductor therebetween,
wherein said driving signal is provided to said second terminal, and said supply current is provided from said third terminal.